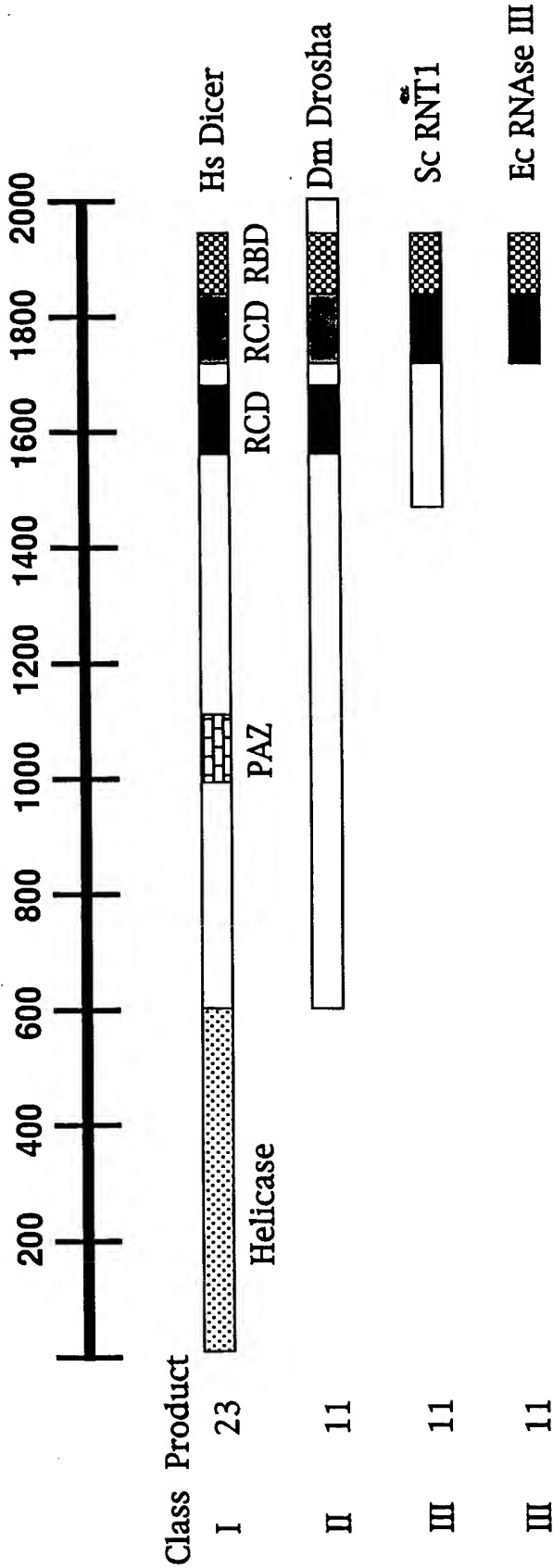


Figure 1

# RNAse III class proteins



RCD - RNAse III RNA cleavage domain  
RBD - RNAse III dsRNA binding domain

	(SEQ ID NO:9)	1	MTQNLERIRQRIGYQFNQPAKQAAATRRRAAVRRAA.V.....KHRELEFLGDAIENF
Pasteurella multocida	(SEQ ID NO:10)	1	MNHLDRIRQRKGYRFNFHQEKQAARRAS.T.....KHRELEFLGDSEISF
H. influenzae	(SEQ ID NO:11)	1	MNPVINVNRQRKLGTYTFNHQEQQSARRAS.S.....KHRELEFLGDSILSY
S. typhimurium	(SEQ ID NO:12)	1	MNPVINVNRQRKLGTYTFNHQEQQSARRAS.S.....KHRELEFLGDSILSY
E. coli	(SEQ ID NO:13)	1	MTP.PMNKLTSKLGTYTFKETENLALTRRYANG.G.....KHRELEFLGDSLFS
V. cholerae	(SEQ ID NO:14)	1	MSNSLDRLERKLGTYFKDRTMVALTRRYANG.G.....RNRELEFLGDALINF
P. aeruginosa	(SEQ ID NO:15)	1	MNDPNPLYTEKALGYSYFKDKRKQEAFTTAYANEHRLLNVSHELEFLGDVAVLGL
H. pylori	(SEQ ID NO:16)	1	MKQLLELVSTSFDFQFNDLTEFAFTTAYANEHRLKKISHRELEFLGDVAVLGL
S. pyogenes	(SEQ ID NO:17)	1	MKELQTVMKNHFAIEADKKETQFAFTTAYNEHRKKPYEDLELEFLGDVAVEL
S. pneumoniae	(SEQ ID NO:18)	1	MSKSHYKDKKFYKKVEQKE.FQERISVHFQNEKIYQAFSSVFINDFMNRDLDHRELEFLGDVAVEL
B. subtilis	(SEQ ID NO:19)	1	MSKQKKSKIVNRRFRKR...FDTKMETELGFTYQNIIDITYQAFSLCTCSYSNELDQKS.SNRELEFLGDVADEL
S. aureus	(SEQ ID NO:20)	1	MMKKKSSDFCLCNERKSQLSKFEN.LSIDFSNFDINTLATRVYAYEHG..GLPTERLEFLGDVAISL
Borrelia burgdorferi	(SEQ ID NO:21)	1	MTQPQRQALLDAFGVDLPD.E.SLAKALVP.....YSKKEHYETLEFLGDALVNF
M. leprae	(SEQ ID NO:22)	1	MKMRELCEKKLGTYTFKDKS.EKMAIPVLRQHHEYKDDKYERLEFLGDVAENL
Aquifex aeolicus	(SEQ ID NO:23)	1	MESFEKIELLLSYSFKNKELEIASPDRALPA.A....RSAAAGNYERLEFLGDVRVLGL
Rickettsia conorii	(SEQ ID NO:24)	1	MSKSHYKDKKFYKKVEQKE.FQERISVHFQNEKIYQAFSLCTCSYSNELDQKS.SNRELEFLGDVADEL
S. A. tumefaciens	(SEQ ID NO:25)	1	MGMACQHALGPPVQGCGMSKTKPLSADEISRLEKLLIGYEFKEKARIDRALPA.A....RSAAAGNYERLEFLGDVRVLGL
S. cerevisiae	(SEQ ID NO:26)	171	EKEDEEEDEGEDSDYPTKAGDI VKATKWPPKPEIQDLAIRARVFIHKSTIKDKKVYLSGSEMIAHNRELEFLGDSIN

(SEQ ID NO:9)	<i>Pasteurella multocida</i>	50
(SEQ ID NO:10)	<i>H. influenzae</i>	51
(SEQ ID NO:11)	<i>S. typhimurium</i>	52
(SEQ ID NO:12)	<i>E. coli</i>	53
(SEQ ID NO:13)	<i>V. cholerae</i>	54
(SEQ ID NO:14)	<i>P. aeruginosa</i>	55
(SEQ ID NO:15)	<i>H. pylori</i>	56
(SEQ ID NO:16)	<i>S. pyogenes</i>	57
(SEQ ID NO:17)	<i>S. pneumoniae</i>	58
(SEQ ID NO:18)	<i>B. subtilis</i>	59
(SEQ ID NO:19)	<i>S. aureus</i>	60
(SEQ ID NO:20)	<i>Borrelia burgdorferi</i>	61
(SEQ ID NO:21)	<i>M. leprae</i>	62
(SEQ ID NO:22)	<i>Acetivibrio aceticus</i>	63
(SEQ ID NO:23)	<i>Rickettsia conorii</i>	64
(SEQ ID NO:24)	<i>A. tumefaciens</i>	65
(SEQ ID NO:25)	<i>S. cerevisiae</i>	66

Figure 2

Figure 3  
RNAse Activity of E38A

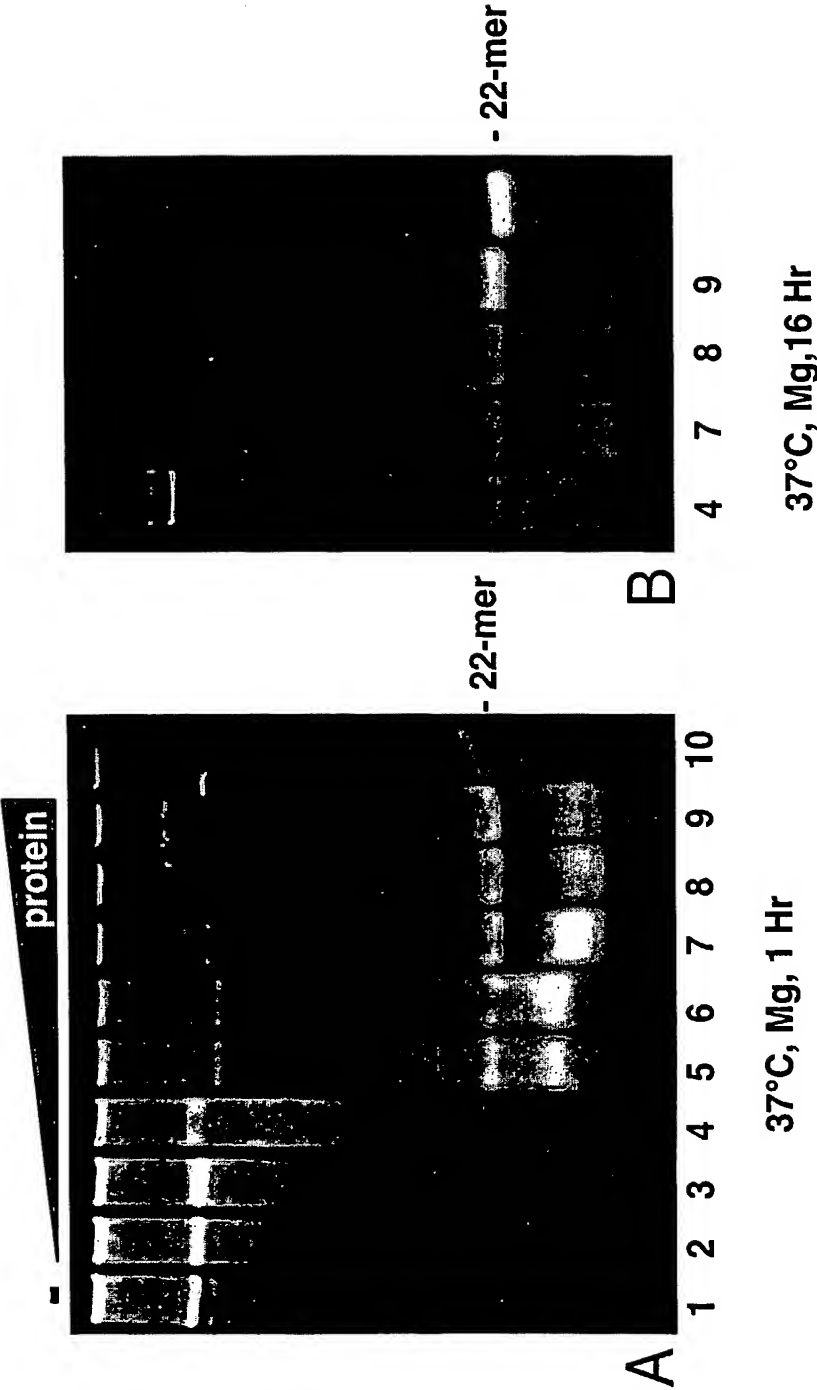


Figure 4  
RNAse Activity of E38A

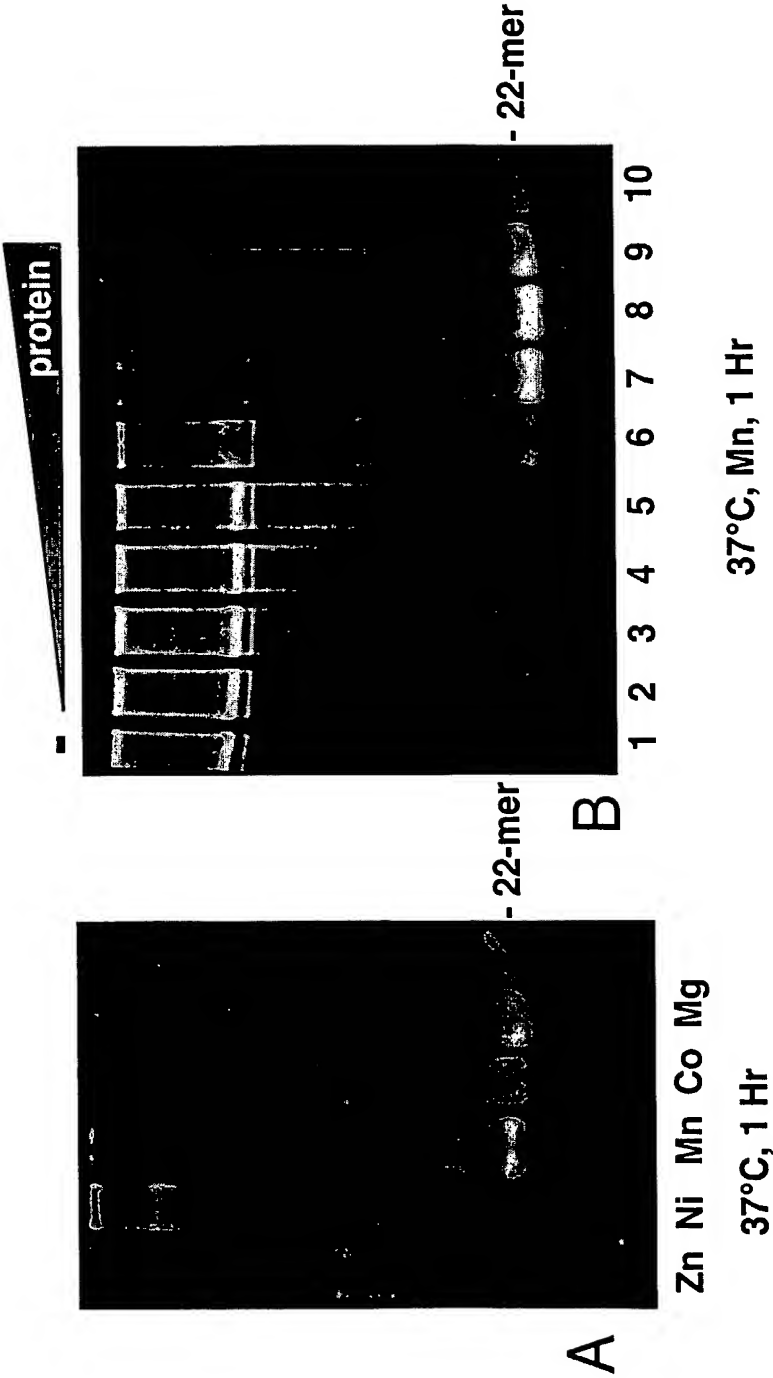


Figure 5  
RNAse Activity of E38A

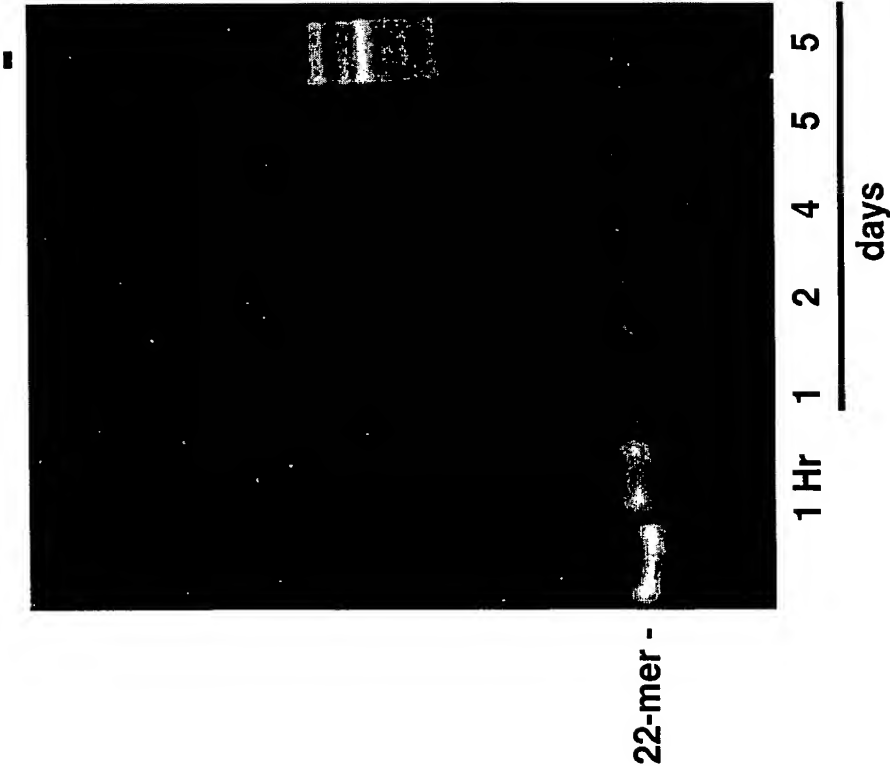


Figure 6  
RNAse Activity of E38A

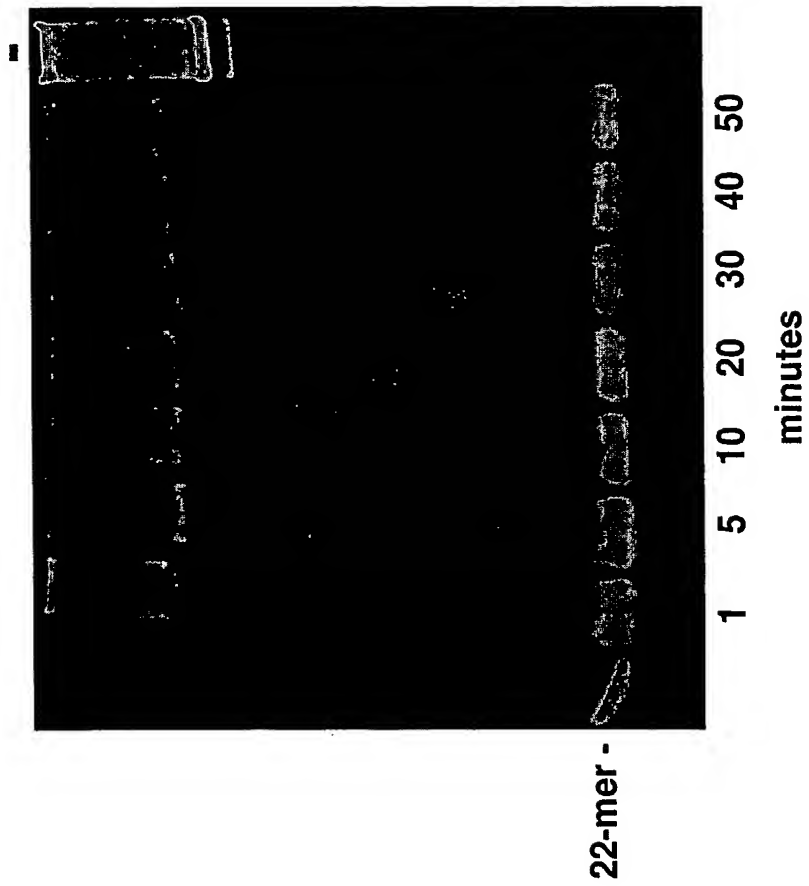


Figure 7  
RNase Activity of E38A

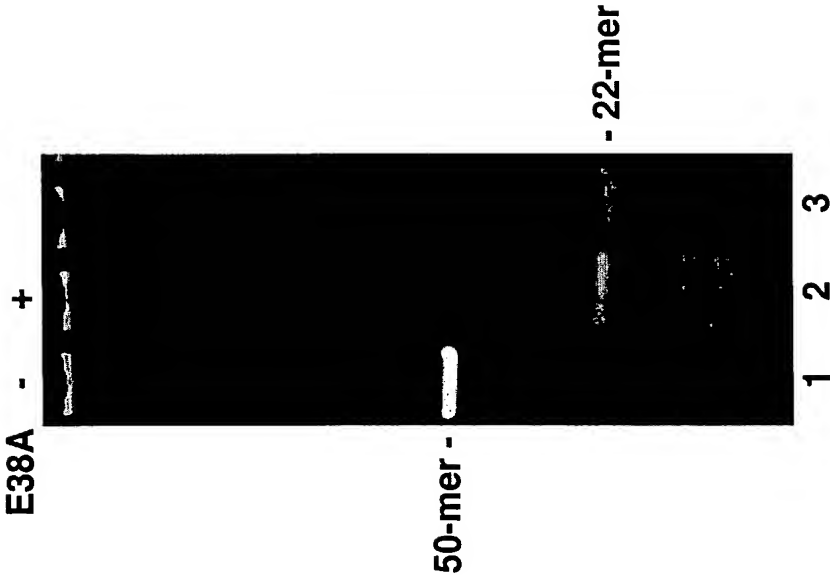


Figure 8  
Comparisons

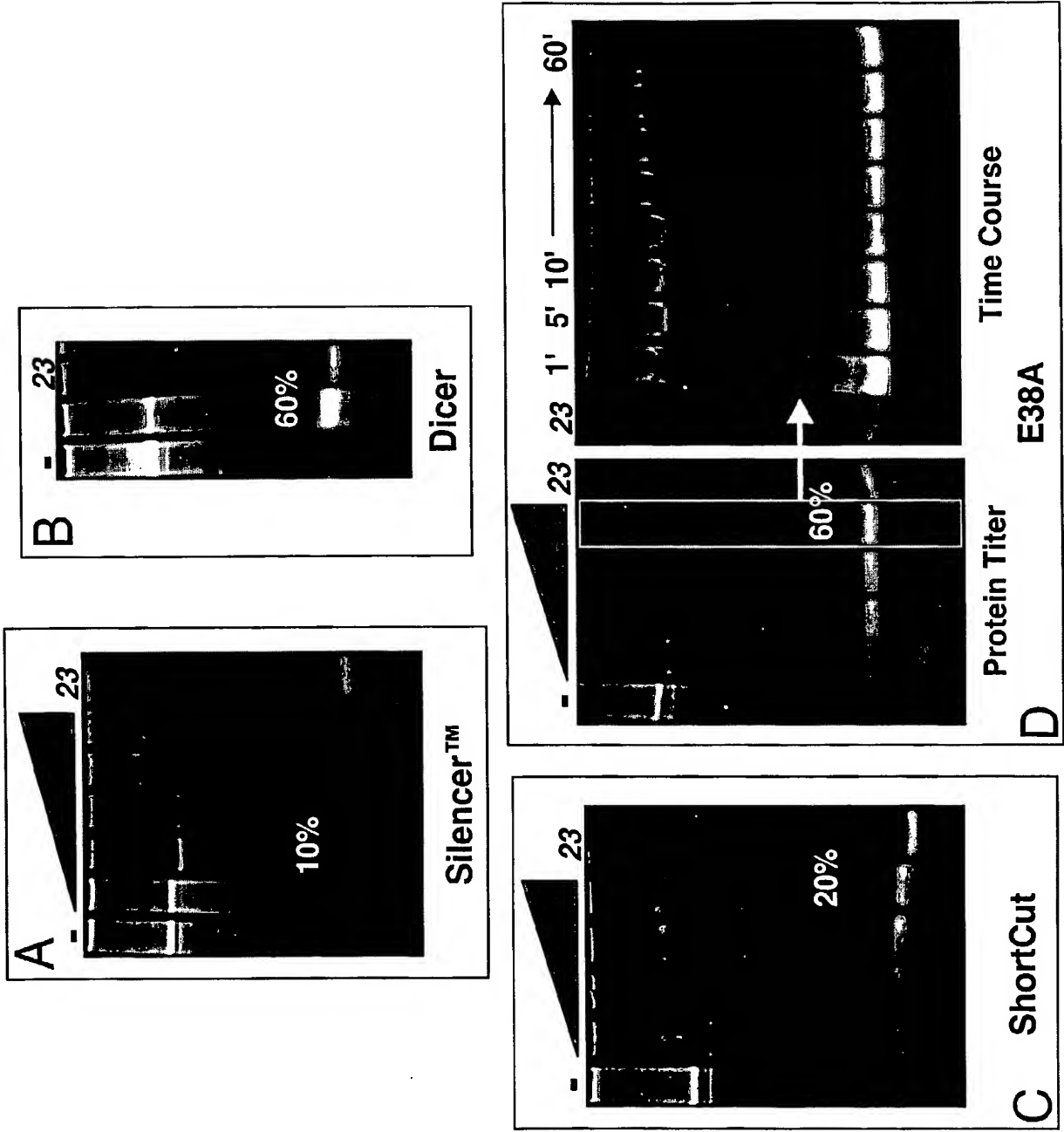
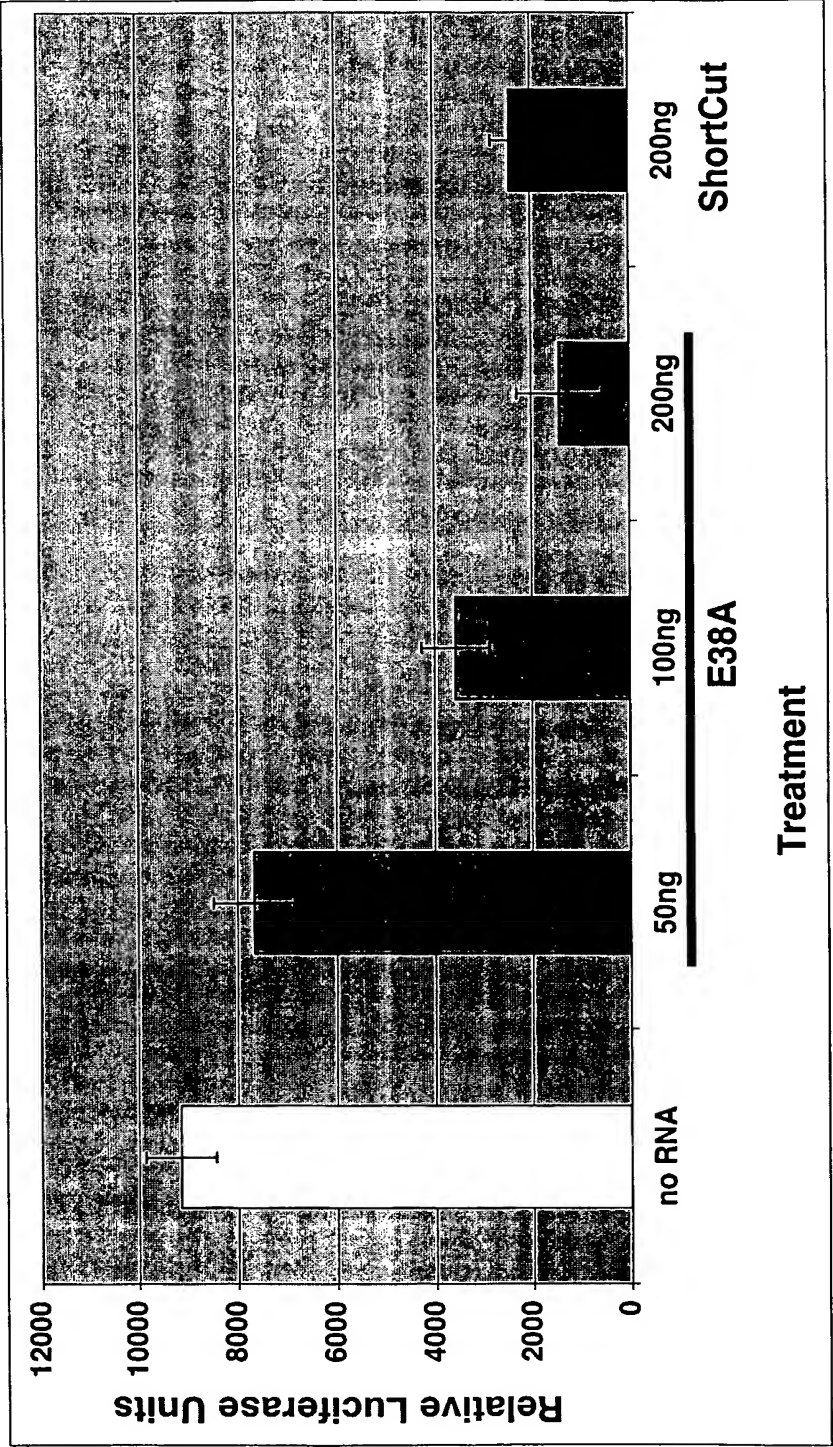




Figure 9  
RNAi activity of E38A-cleaved dsRNA



Luciferase activity in transfected NIH 3T3 cells

Figure 10  
RNAse Activity of E65A

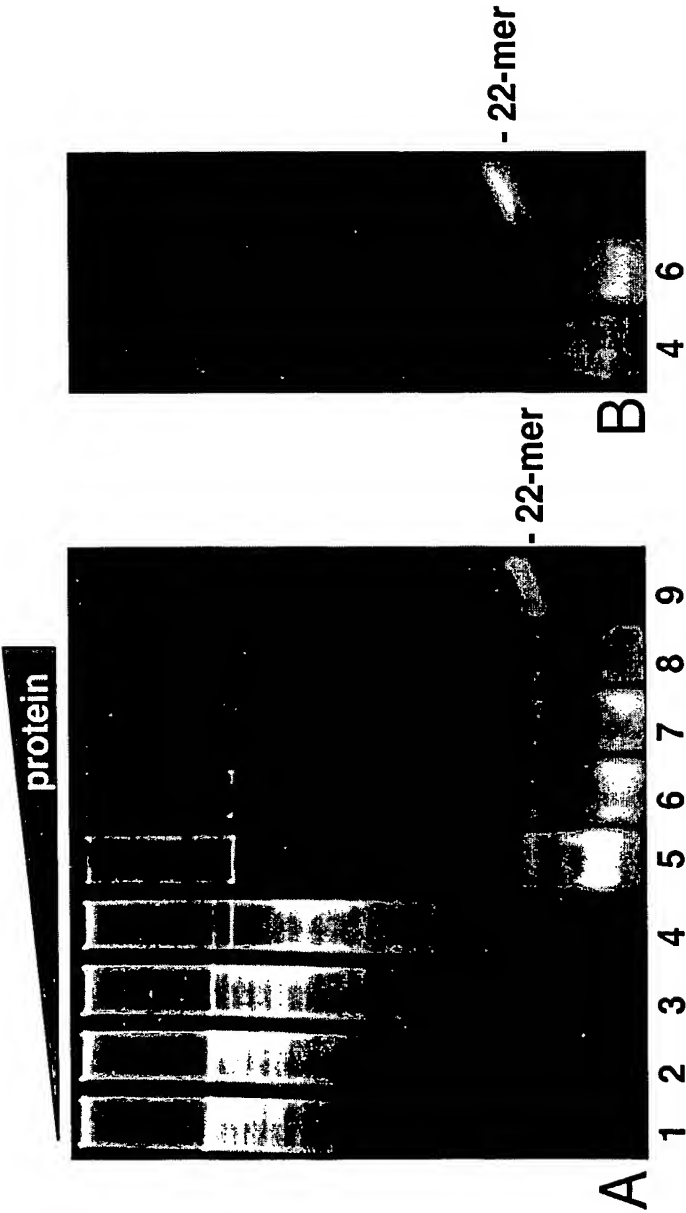


Figure 11  
RNAse Activity of E38T & E38W

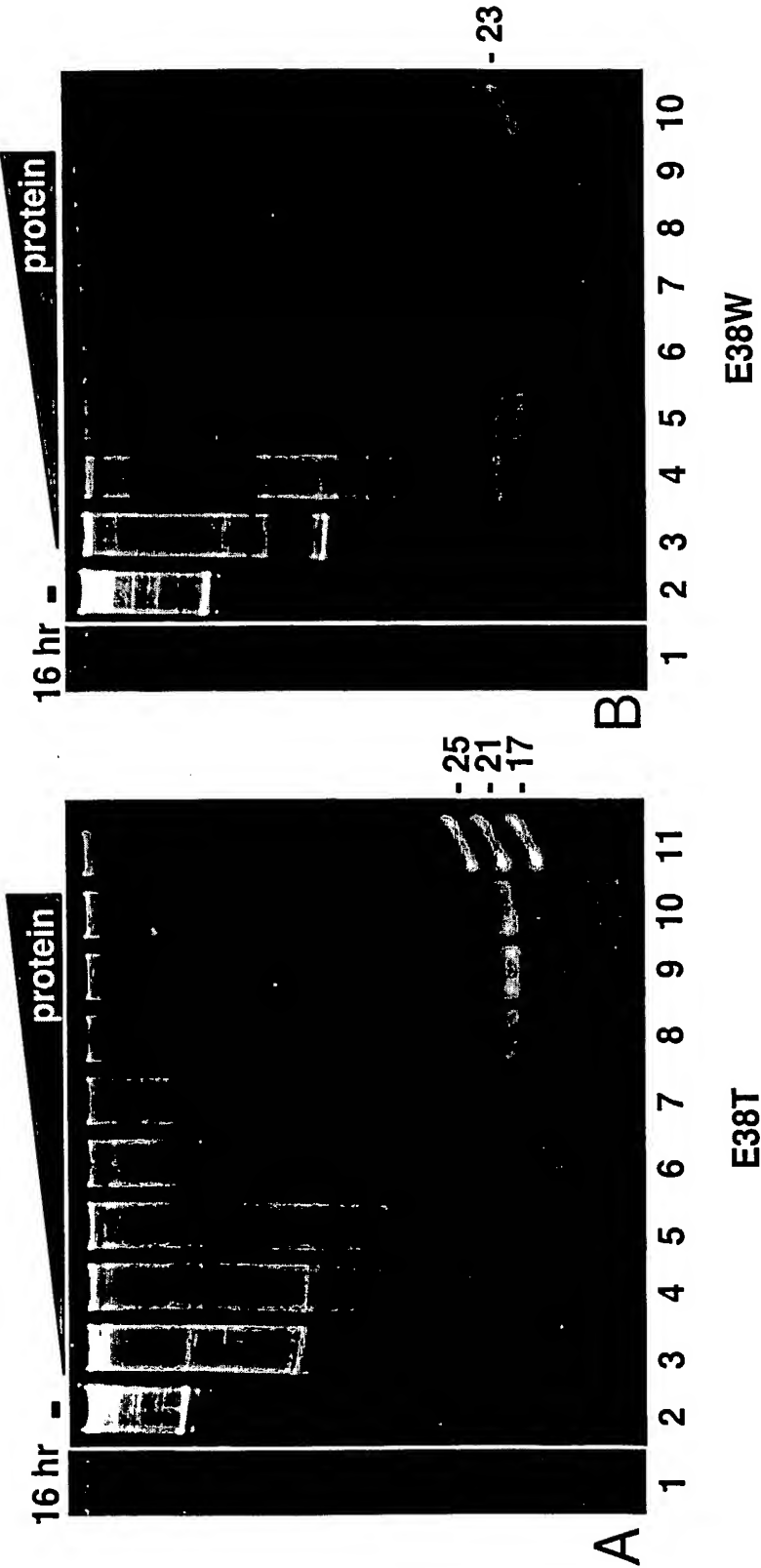


Figure 12

*E. coli* RNase III Mutants

<i>Aquifex aeolicus</i>	wt	37	ETLEFLGDA	63	REGFLS	107	DVFEAL
<i>E. coli</i>	wt	38	ERLEFLGDS	64	DEGDMS	114	DTVEAL
E38D	wt	38	DRLEFLGDS	64	DEGDMS	114	DTVEAL
E38K	wt	38	KRLEFLGDS	64	DEGDMS	114	DTVEAL
E38Q	wt	38	QRLEFLGDS	64	DEGDMS	114	DTVEAL
E38P	wt	38	PRLEFLGDS	64	DEGDMS	114	DTVEAL
E38V	wt	38	VRLEFLGDS	64	DEGDMS	114	DTVEAL
E38A	23	38	ARLEFLGDS	64	DEGDMS	114	DTVEAL
E38T	23	38	TRLEFLGDS	64	DEGDMS	114	DTVEAL
E38W	23	38	WRLEFLGDS	64	DEGDMS	114	DTVEAL
D45V	wt	38	ERLEFLGVS	64	DEGDMS	114	DTVEAL
D45A	i	38	ERLEFLGAS	64	DEGDMS	114	DTVEAL
E65P	wt	38	ERLEFLGDS	64	DPGDMS	114	DTVEAL
E65A	23	38	ERLEFLGDS	64	DAGDMS	114	DTVEAL
E117D	i	38	ERLEFLGDS	64	DEGDMS	114	DTVDAL
E38Q,E65P	wt	38	QRLEFLGDS	64	DPGDMS	114	DTVEAL
E38A,E65A	wt	38	ARLEFLGDS	64	DAGDMS	114	DTVEAL

Figure 13  
E117D, E38A mixtures produce multimers of  
23 bp product

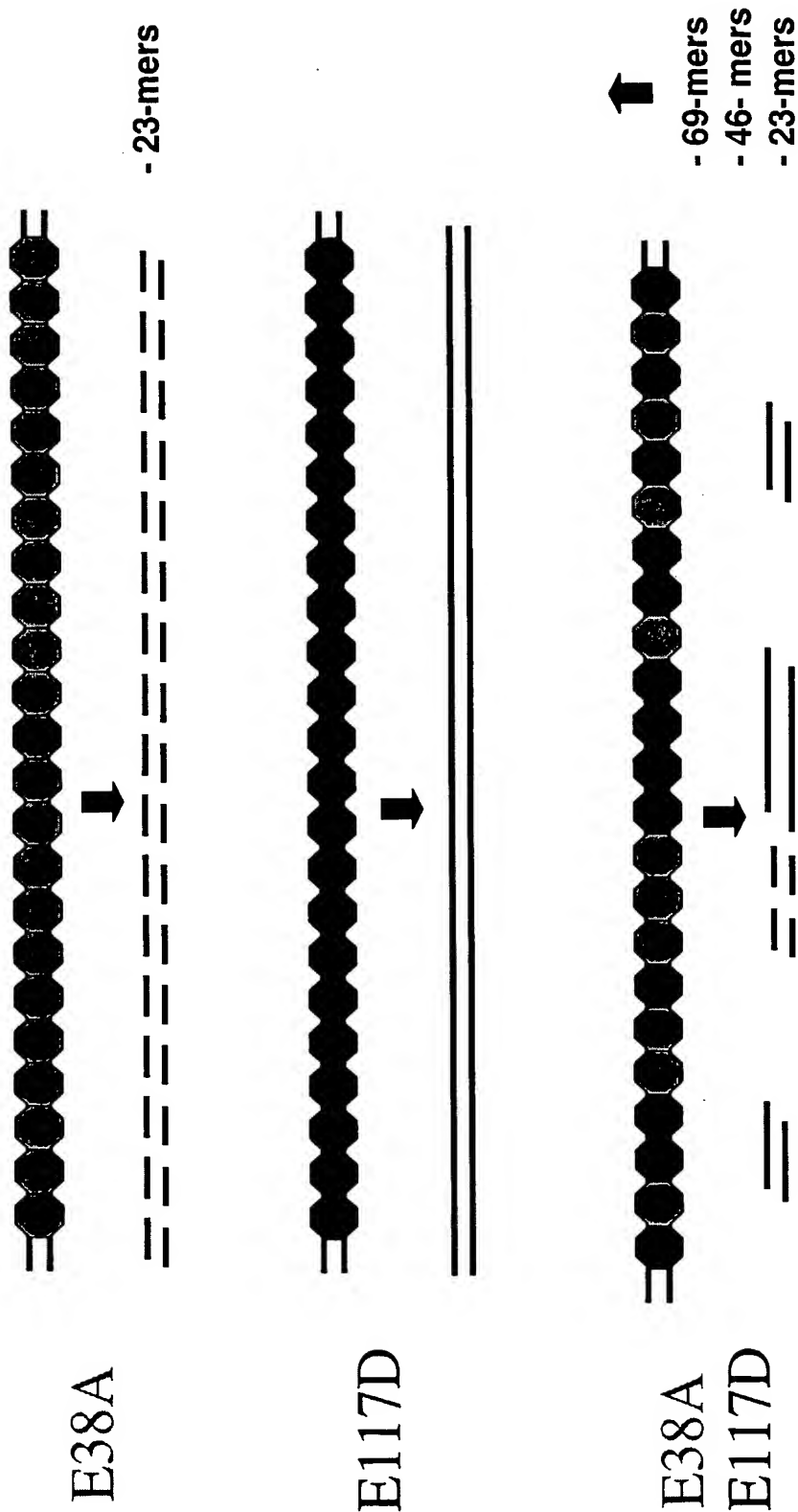


Figure 14

E117D, E38A mixtures produce multimers of  
23 bp product

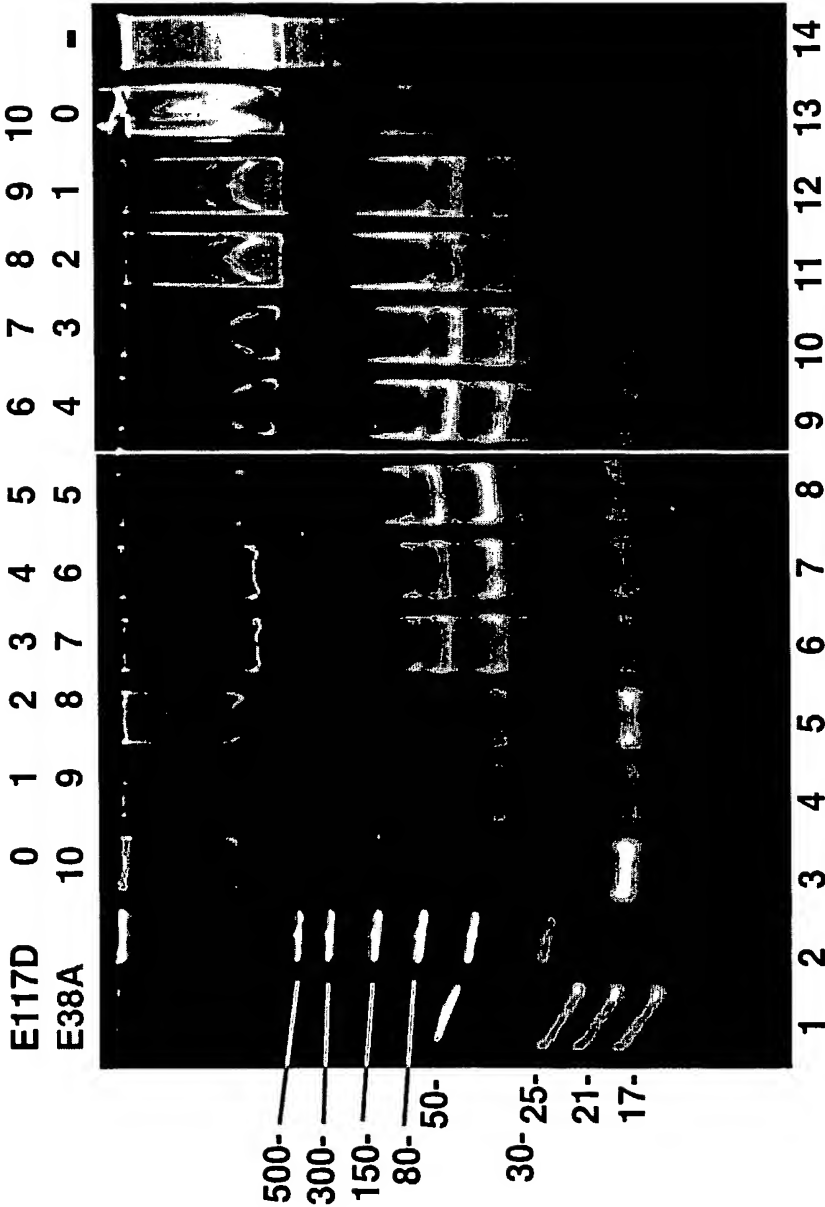


Figure 15  
E117D, WT mixtures produce multimers of  
23 bp product

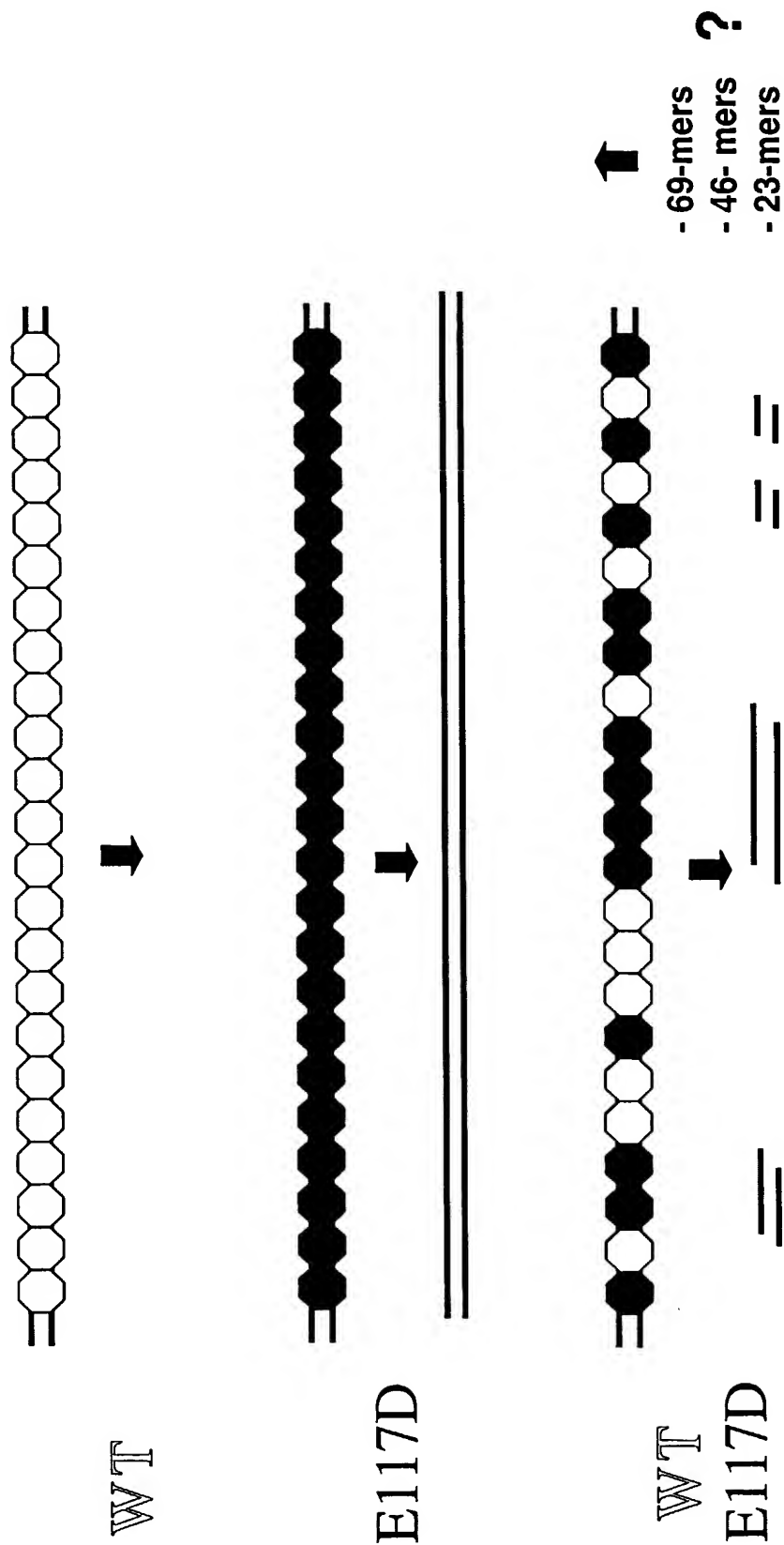
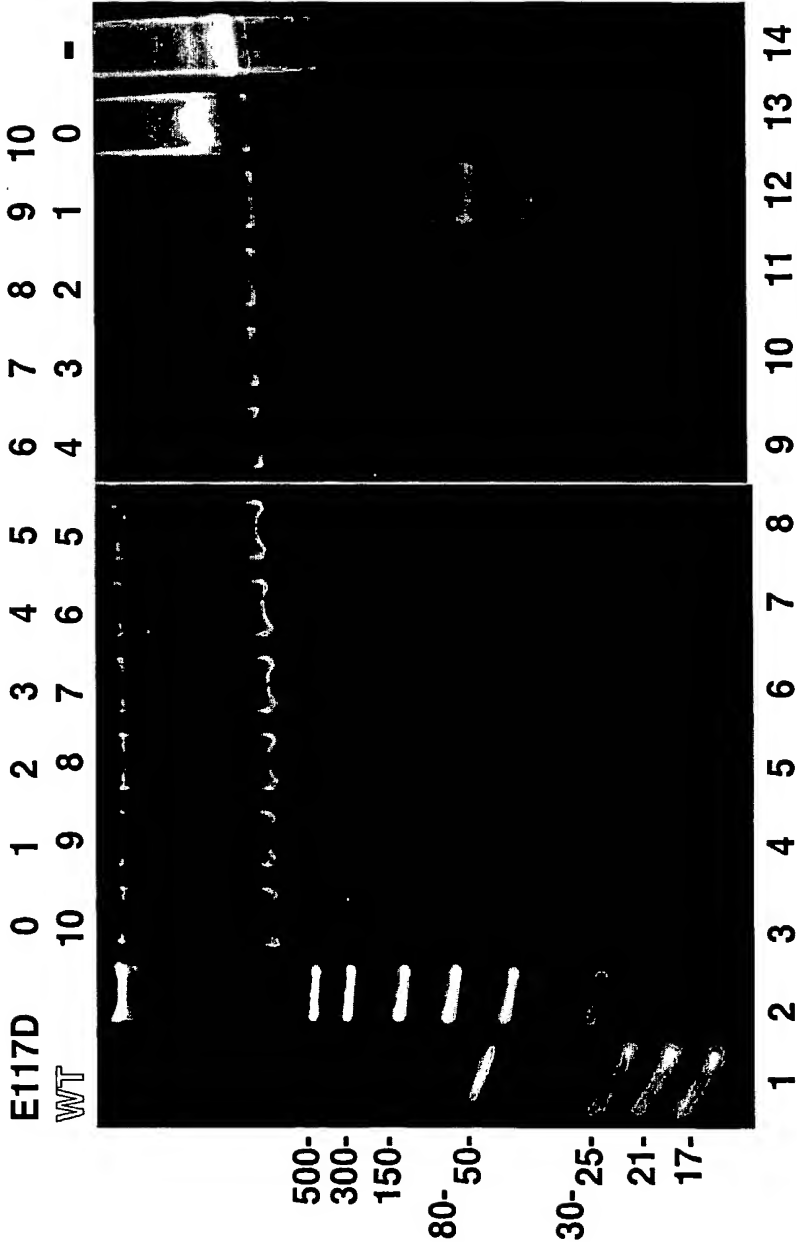


Figure 16

E117D, WT mixtures produce multimers of 23 bp product





siRNA evaluation tool (EXPERIMENTAL) v0.57 results - Thu Jan 13 15:59:54 2005

**Query:** Homo sapiens tumor protein p53 (Li-Fraumeni syndrome)  
NM\_000546 (TP53), mRNA.  
**Query Length:** 2629 nt  
**Displayed Region:** 1 - 2608  
**Database Searched:** Homo\_sapiens -- NCBI :: hs.fna  
**Min Match Length:** 21 nt

Hits to the following DB sequences were filtered out of the results (user cutoff 1.0E-70):  
[gi|8400737|ref|NM\\_000546.2|](#) E-val:0.0

Current resolution is 4 base(s).

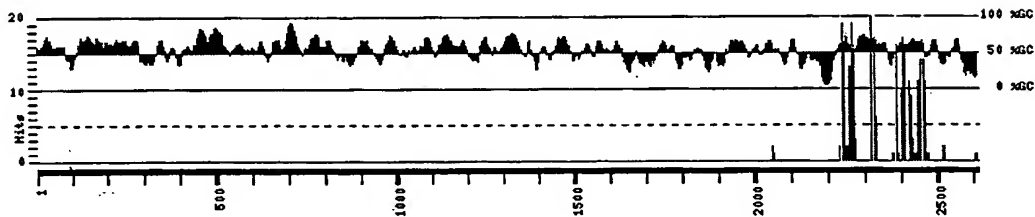


Figure 17